2012

ONR Naval S&T Partnership Conference & ASNE Expo

SEA WARFARE AND WEAPONS
ONR CODE 33

Dr. Rich Carlin

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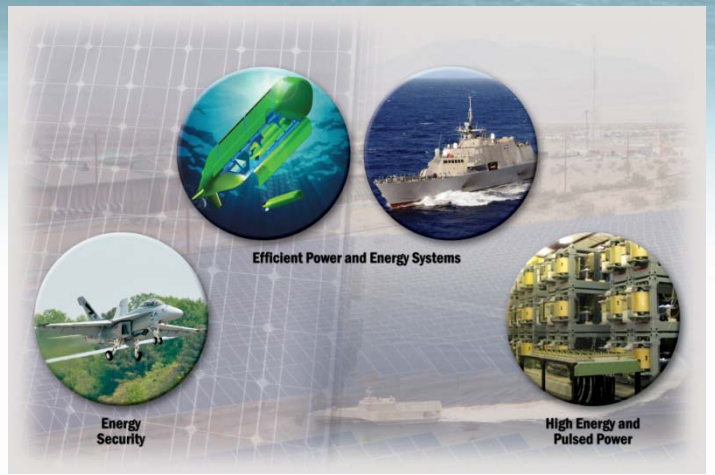
Naval Power & Energy S&T

Vision: **Increase Naval forces' freedom of action through energy security and efficient power systems. Increase combat capability through high energy and pulsed power systems. Provide the desired power where and when needed at the manned and unmanned platform, system and personal levels.**



Objectives

Energy Security:

- Alternative and renewable energy sources
- Future alternative fuels
- Resilient power networks and systems for platforms and infrastructure

Efficient Power and Energy Systems:

- Materials, devices and architectures to increase efficiency and power density on platforms, and reduce weight for personal power
- Efficient power conversion, switching, distribution, control and thermal management
- Efficient power generation equipment, including engines, generators, motors, and actuators
- Electrochemical, thermal and kinetic energy storage

High Energy & Pulse Power:

- Energy storage, switching & control systems
- Pulsed power architectures

Key Research Topics

Advanced Naval Power Systems
Air Platform Power & Propulsion
Power Electronics
Personal Power
Bio-derived Materials, Sensors, Systems & Processes
Manufacturing Science
Advanced Naval Materials

Energy Systems Technology Evaluation Program

Education & Training Opportunities for Current & Future Naval Energy Workforce

- Command Personnel
- NPS* Energy Students
- SDSU** Veterans & Wounded Warrior Outreach Pilot

SPAWAR
Program Management
Info/Network Security Expertise
Technical & Business Training

Technology Demonstrations at Naval Facilities to Reduce Energy Costs & Increase Energy Security

ONR Oversight & Funding

NPS*
Energy ROI Research
Student Project Participation
Technical & Business Education

NAVFAC/NFESC
Project Management
Facility Expertise
Technical & Business Training

As we recover from this recession, the transition to clean energy has the potential to grow our economy and create millions of jobs - but only if we accelerate that transition. Only if we seize the moment."
President Barack Obama (White House Website, 29 Jan 2012)

*NPS: Naval Postgraduate School
**SDSU: San Diego State University

Platform Design and Survivability

Vision: **Develop agile, fuel efficient and flexible platforms capable of operating in required environments. Enable manned and unmanned Naval platforms and forces to operate in hostile environments while avoiding, defeating and surviving attacks.**

Objectives

Advance Mobility:

- Advanced platform design focused on efficiency, agility and affordability
- Autonomous and unmanned vehicle mobility
- Platform survivability and signature reduction
- Survivable platforms

Reliable, Efficient Long-Range, High-Speed Platforms with Optimized Payload Capabilities:

- Modeling and simulation tools
- Efficient ship design analysis tools
- Modular platforms

At-Sea Sustainment:

- Payload and weapons movement
- Integrated comms

Affordable Fleet/Force Modernization:

- Technology upgrades during midlife overhauls
- Technology opportunities proven through Fleet demonstrations

Key Research Topics

Advanced Sea Platforms
Hydromechanics
Signature Reduction
Advanced Naval Materials
Naval Engineering/Naval Architecture
Unmanned Vehicle Technologies
Intelligent & Autonomous Systems
Expeditionary Maneuver
Design and Integration Tools
Flexible and responsive delivery systems

Other Program Officers You Should Meet

Name	Program	ONR Code	Room
Anderson, Dr. Michele	Electrochemical Materials	33	Roosevelt
Beermann-Curtin, Sharon	P&E S&T Technical Lead	33	Roosevelt
Cho, Dr. Peter	Power Systems and Control	33	Roosevelt
Coombe, Dr. Scott	Electromagnetic Conversion, Solid State Devices	33	Roosevelt
Hess, Dr. Paul	Structural Reliability and Vulnerability	33	Roosevelt
Hoffman, Donald	Power Generation Systems	33	Roosevelt
Joslin, Dr. Ron	Sub-Surface Hydromechanics	33	Roosevelt
Kabacoff, Dr. Larry	Processing and Mechanical Behavior of Bulk Nano-structured Materials	33	Roosevelt
Medeiros, Maria	Autonomous Vehicle Power Systems	33	Roosevelt
Mullins, Dr. William	Structural Metallic Materials	33	Roosevelt
Perez, Dr. Airan	Corrosion Control Technologies	33	Roosevelt
Purtell, Dr. Patrick	Hydromechanics	33	Roosevelt

Other Program Officers You Should Meet

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Seman, Anthony	Platform Automation	33	Roosevelt
Shifler, Dr. David	Flight Deck Thermal Management	33	Roosevelt
Smith, Dr. Wallace	Acoustic Transduction Materials	33	Roosevelt
Spector, Dr. Mark	Metamaterials, Thermal Management	33	Roosevelt
Stimak, George	Electro-Mechanical Signatures	33	Roosevelt

Questions?